

**REMARKS:**

These amendments and remarks are filed in response to a final office action dated November 21, 2006. Claims 1-41 are pending in the application. Claims 1-4, 6-8, 10-12, 14-20, 22-27, 29-31, 33-37, and 39-41 are rejected. Claims 5, 9, 13, 21, 28, 32, and 38 are objected to and are amended to be in independent form.

Claims 1-4, 6-8, 10-12, 14-20, 22-27, 29-31, 33-37, and 39-41 are rejected under 35 U.S.C. § 103(a) as unpatentable over United States Patent Number 6,143,930 (*Singh*) in view of Organic Chemistry Laboratory II, Chemistry 3712/3612, Spring 2003, Department of Chemistry and Biochemistry, University of Arkansas (*Allison*). Applicants respectfully traverse the rejection.

*Singh* neither teaches nor suggests the pending claim elements. Initially, as the Examiner indicates, *Singh* does not perform two consecutive extraction steps nor does *Singh* teach forming dimethyl ether in the last distillation column (rejection at page 3, paragraph 3). The present invention discloses advantages obtained by *adding* DME to the feed to the extractor. Most importantly, *Singh* does not disclose forming DME, does not recognize benefits of having DME present during the extraction, and does not disclose procedures for causing the formation of DME. For these reasons alone, the Applicants respectfully assert the rejection is improper and should be withdrawn.

Additionally, *Allison* does not disclose *Singh*'s missing elements. *Allison* does not teach reduction and/or removal of permanganate-reducing compounds. Also, *Allison* does not form a second overhead stream comprising methyl iodide, dimethyl ether, and at least one permanganate-reducing compound. The Examiner also asserts that combining the *Singh* and *Allison* references is obvious because one skilled in the art would perform multiple extractions on any separation process. However, no motivation or suggestion is provided by either reference to combine an extraction method from *Singh* with multiple extractions of *Allison*.

Indeed, the pending specification explains how the addition of a second extraction is not obvious because each extraction also requires solvent, equipment, and energy expenditures. The specification also explains how each extraction also leads to loss of a desirable component, methyl iodide, and that, for example, the amount of methyl iodide in the aqueous extract dropped from 1.8 percent when no DME was present to 0.5 percent when DME was present. (*See*

paragraph [0050]). By contrast, *Singh* discloses a methyl iodide concentration of 2 percent in the aqueous extract. (See column 5, lines 2-3). This further demonstrates that *Singh* neither teaches the presence of DME nor suggests any benefit to its presence.

*Singh* and *Allison*, alone or in combination, do not teach, show, or suggest the steps of (a) distilling at least a portion of the first overhead to produce a second overhead stream comprising methyl iodide, dimethyl ether, and said at least one PRC, (b) extracting the second overhead stream with water to form a first raffinate and a first aqueous extract stream containing said at least one PRC, and (c) extracting the first raffinate with water to form a second raffinate and a second aqueous extract stream containing said at least one PRC, as recited in claim 1 and claims 2-4, 6-8, 10-12, and 14-16 dependent thereon.

Also, *Singh* and *Allison*, alone or in combination, do not teach, show, or suggest (a) carbonylating at least one reactant selected from the group consisting of methanol, methyl acetate, methyl formate and dimethyl ether in a reactor containing a suitable reaction medium comprising an organic iodide, (b) separating the products of said carbonylation into a volatile product phase comprising acetic acid, and a less volatile phase, (c) distilling said volatile product phase to yield a purified acetic acid product and a first overhead comprising said organic iodide and at least one permanganate reducing compound (PRC), (d) distilling at least a portion of the first overhead to produce a PRC-enriched second overhead, said second overhead further comprising dimethyl ether, and (e) extracting the second overhead with water, wherein step (e) comprises at least two consecutive extraction steps, each extraction step comprising contacting the second overhead with water and separating therefrom an aqueous stream comprising said at least one PRC, as recited in claim 17 and claims 18-20, 22-27, and 29 dependent thereon.

Additionally, *Singh* and *Allison*, alone or in combination, do not teach, show, or suggest distilling the mixture to separate the mixture into a plurality of streams, at least one of said streams being a PRC enriched overhead stream comprising dimethyl ether; and extracting the PRC enriched overhead stream with water, wherein step (b) comprises at least two consecutive extraction steps, each extraction step comprising contacting the PRC enriched overhead stream with water and separating therefrom an aqueous stream comprising said at least one PRC, as recited in claim 30 and claims 31, 33-37, and 39-41 dependent thereon. Withdrawal of the rejection is respectfully requested.

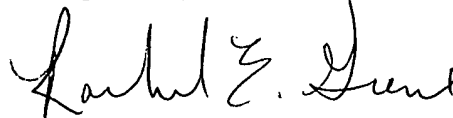
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Applicants believe that the present pending claims are in condition for allowance. Applicants respectfully request that the Examiner reconsider the rejection of the pending claims in light of the above analysis.

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In order to facilitate the resolution of any questions presented by this paper, Applicants request that the Examiner directly contact the undersigned attorney by telephone at 713-787-1595 to further the discussion, reconsideration, and allowance of the claims.

Respectfully submitted,



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